

Application Serial No. 09/641,636

IN THE CLAIMS

Claims 1 and 2 (withdrawn).

Claims 3 and 4 (previously canceled).

Claim 5 (withdrawn).

Claim 6 (previously canceled).

Claims 7 through 11 (withdrawn):

1 Claim 12 (allowed): Apparatus for use in a wireless communications base station
2 comprising:

3 a receiver for monitoring at least one prescribed portion of a control channel
4 resource of an incoming control channel to detect an incoming uplink traffic channel
5 request from at least one mobile unit to which said at least one prescribed portion of said
6 control channel resource is exclusively dedicated, said traffic channel request being
7 periodically repeatedly transmitted by said at least one mobile unit;

8 a detector for determining whether any uplink traffic channel requests have been
9 received and, when an uplink traffic channel request has been detected, assigning a traffic
10 channel to said at least one requesting mobile unit;

11 a transmitter responsive to a determination that at least one request has been
12 received for transmitting a request response message including said traffic channel
13 assignment to said at least one requesting mobile unit;

14 wherein said at least one mobile unit and said base station a priori know the
15 location of said prescribed portion of said control channel resource in said control
16 channel, wherein control header information that indicates at least a structure of said
17 control message is not required to be transmitted with said uplink traffic channel
18 requests; and

19 a utilization apparatus adapted to utilize said received traffic channel request to
20 determine the true value of said received traffic channel request by subtracting an amount
21 of traffic channel resource that has been assigned to said mobile unit that is not known to
22 the mobile unit as being assigned at the time said mobile unit transmitted an uplink traffic
23 channel request from an amount of said traffic channel resource requested in said
24 transmitted uplink traffic channel request.

Application Serial No. 09/641,636

1 Claim 13 (allowed): The apparatus as defined in claim 12 wherein said wireless
2 communications base station is for use in an orthogonal frequency division multiplex
3 multiple access wireless communication system.

1 Claim 14 (allowed): The apparatus as defined in claim 12 wherein said request
2 response message includes a traffic channel assignment for said at least one mobile unit.

Claims 15-17 (previously canceled).

1 Claim 18 (allowed): The apparatus as defined in claim 12 wherein said true value
2 of said traffic channel request is utilized to generate an uplink traffic channel assignment
3 for said at least one mobile unit that transmitted the traffic channel request.

1 Claim 19 (allowed): The apparatus as defined in claim 18 wherein said uplink
2 traffic channel assignment is based on the transmission rate of data to be transported on
3 said assigned traffic channel.

1 Claim 20 (allowed): The apparatus as defined in claim 18 wherein said uplink
2 traffic channel assignment is based on the number of frames required to transport data on
3 said assigned traffic channel.

1 Claim 21 (allowed): Apparatus for use in a wireless mobile communication
2 system comprising:

3 a plurality of mobile units, wherein each of said mobile units includes
4 a formatter for formatting a control channel including a prescribed control
5 channel resource having one or more time slots, said control channel being dedicated
6 exclusively to a particular mobile unit and having a prescribed portion of said control
7 channel resource reserved to transport uplink traffic channel requests, wherein each
8 mobile unit has a distinct control channel and contention is eliminated on said uplink;

9 a transmitter for transmitting said uplink traffic channel requests in said
10 prescribed portion of said control channel resource to a base station;

11 a receiver to receive a response including an uplink channel assignment from said
12 base station; and

13 a controller associated with said transmitter to control said transmitting to
14 periodically repeating transmission of said uplink traffic channel request in prescribed
15 one or more of said one or more time slots prior to said particular mobile unit receiving a
16 response from said base station,

Application Serial No. 09/641,636

17 wherein said particular mobile unit and said base station a priori know the
18 location of said prescribed portion of said control channel resource in said control
19 channel,

20 wherein there is no need to include control header information that indicates at
21 least a structure of said control message with said uplink traffic channel requests and
22 latency is minimized in transmitting said uplink traffic channel requests; and

23 a base station including

24 a receiver for monitoring at least one prescribed portion of a control channel
25 resource of an incoming control channel to detect an incoming uplink traffic channel
26 request from at least one mobile unit to which said at least one prescribed portion of said
27 control channel resource is exclusively dedicated, said traffic channel request being
28 periodically repeatedly transmitted by said at least one mobile unit

29 a detector for determining whether any uplink traffic channel requests have been
30 received and, when an uplink traffic channel request has been detected, assigning a traffic
31 channel to said at least one requesting mobile unit,

32 a transmitter responsive to a determination that at least one request has been
33 received for transmitting a request response message including said traffic channel
34 assignment to said at least one requesting mobile unit,

35 wherein said at least one mobile unit and said base station a priori know the
36 location of said prescribed portion of said control channel resource in said control
37 channel, wherein control header information is not required to be transmitted with said
38 uplink traffic channel requests, and

39 a utilization apparatus adapted to utilize said received traffic channel request to
40 determine the true value of said received traffic channel request by subtracting an amount
41 of traffic channel resource that has been assigned to said mobile unit that is not known to
42 the mobile unit as being assigned at the time said mobile unit transmitted an uplink traffic
43 channel request from an amount of said traffic channel resource requested in said
44 transmitted uplink traffic channel request.

1 Claim 22 (allowed): The system as defined in claim 21 wherein said wireless
2 mobile communication system is an orthogonal frequency division multiplex multiple
3 access wireless mobile communication system.

Application Serial No. 09/641,636

1 Claim 23 (withdrawn): Apparatus for use in a wireless communications mobile
2 unit comprising;

3 means for formatting a control channel including a prescribed control channel
4 resource having one or more time slots, said control channel being dedicated exclusively
5 to a particular mobile unit and having a prescribed portion of said control channel
6 resource reserved to transport uplink traffic channel requests, wherein each mobile unit
7 has a distinct control channel and contention is eliminated on said uplink;

8 means for transmitting said uplink traffic channel requests in said prescribed
9 portion of said control channel resource to a base station;

10 means for receiving a response including an uplink channel assignment from said
11 base station; and

12 means for controlling said transmitter to control said transmitting to periodically
13 repeating transmit said uplink traffic channel request in prescribed one or more of said
14 one or more time slots prior to said particular mobile unit receiving a response from said
15 base station,

16 wherein said particular mobile unit and said base station a priori know the
17 location of said prescribed portion of said control channel resource in said control
18 channel,

19 wherein there is no need to include control header information that indicates at
20 least a structure of said control message with said uplink traffic channel requests and
21 latency is minimized in transmitting said uplink traffic channel requests.

Claims 24 and 25 (cancel).

1 Claim 26 (withdrawn): The apparatus as defined in claim 23 wherein said
2 prescribed portion of said control channel resource includes a plurality of time slots, each
3 of said time slots including a set of contiguous bit positions.

Claim 27 (previously canceled).

1 28. (allowed): Apparatus for use in a wireless communications base station
2 comprising:

3 receiver means for monitoring at least one prescribed portion of a control channel
4 resource of an incoming control channel to detect an incoming uplink traffic channel
5 request from at least one mobile unit to which said at least one prescribed portion of said

Application Serial No. 09/641,636

6 control channel resource is exclusively dedicated, said traffic channel request being
7 periodically repeatedly transmitted by said at least one mobile unit;

8 means for determining whether any uplink traffic channel requests have been
9 received and, when an uplink traffic channel request has been detected, assigning a traffic
10 channel to said at least one requesting mobile unit;

11 means responsive to a determination that at least one request has been received
12 for transmitting a request response message including said traffic channel assignment to
13 said at least one requesting mobile unit;

14 wherein said at least one mobile unit and said base station a priori know the
15 location of said prescribed portion of said control channel resource in said control
16 channel, wherein control header information that indicates at least a structure of said
17 control message is not required to be transmitted with said uplink traffic channel
18 requests; and

19 means for utilizing said received traffic channel request to determine the true
20 value of said received traffic channel request by subtracting an amount of traffic channel
21 resource that has been assigned to said mobile unit that is not known to the mobile unit as
22 being assigned at the time said mobile unit transmitted an uplink traffic channel request
23 from an amount of said traffic channel resource requested in said transmitted uplink
24 traffic channel request.

1 Claim 29 (allowed): The apparatus as defined in claim 28 wherein said request
2 response message includes a traffic channel assignment for said at least one mobile unit.

Claims 30 and 31 (previously canceled).

1 32. (allowed): The apparatus as defined in claim 28 wherein said true value of
2 said traffic channel request is utilized to generate a traffic channel assignment for said at
3 least one mobile unit that transmitted the traffic channel request.

1 33. (withdrawn): A method for use in a wireless communications mobile unit
2 comprising the steps of:

3 formatting a control channel including a prescribed control channel resource
4 having one or more time slots, said control channel being dedicated exclusively to a
5 particular mobile unit and having a prescribed portion of said control channel resource

Application Serial No. 09/641,636

6 reserved to transport uplink traffic channel requests, wherein each mobile unit has a
7 distinct control channel and contention is eliminated on said uplink;

8 transmitting said uplink traffic channel requests in said prescribed portion of said
9 control channel resource to a base station;

10 receiving a response including an uplink channel assignment from said base
11 station; and

12 controlling said transmitting to periodically repeating transmission of said uplink
13 traffic channel request in prescribed one or more of said one or more time slots prior to
14 said particular mobile unit receiving a response from said base station,

15 wherein said particular mobile unit and said base station a priori know the
16 location of said prescribed portion of said control channel resource in said control
17 channel,

18 wherein there is no need to include control header information that indicates at
19 least a structure of said control message with said uplink traffic channel requests and
20 latency is minimized in transmitting said uplink traffic channel requests.

1 Claim 34 (withdrawn): The method as defined in claim 33 wherein said method
2 for use in said wireless communications mobile unit is for use in an orthogonal frequency
3 division multiplex multiple access wireless communication system.

Claim 35 (previously canceled).

1 Claim 36 (withdrawn): The apparatus as defined in claim 33 wherein said
2 prescribed portion of said control channel resource includes a plurality of time slots, and
3 wherein said step of transmitting includes a step of controlling said transmission to
4 periodically repeatedly transmit said uplink traffic channel request in prescribed ones of
5 said plurality of time slots prior to receiving a response from said base station.

1 Claim 37 (withdrawn): The method as defined in claim 33 wherein said
2 prescribed portion of said control channel resource includes a plurality of time slots, each
3 of said time slots including a set of contiguous bit positions.

1 Claim 38 (withdrawn): The method as defined in claim 37 wherein said step of
2 transmitting includes a step of persistently transmitting said uplink traffic channel request
3 in prescribed ones of said plurality of time slots.

Application Serial No. 09/641,636

1 Claim 39 (allowed): A method for use in a wireless communications base station
2 comprising the steps of:

3 monitoring at least one prescribed portion of a control channel resource of an
4 incoming control channel to detect an incoming uplink traffic channel request from at
5 least one mobile unit to which said at least one prescribed portion of said control channel
6 resource is exclusively dedicated, said traffic channel request being periodically
7 repeatedly transmitted by said at least one mobile unit;

8 determining whether any uplink traffic channel requests have been received and,
9 if an uplink traffic channel request has been detected, assigning a traffic channel to said at
10 least one requesting mobile unit;

11 in response to a determination that at least one request has been received,
12 transmitting a request response message including said traffic channel assignment to said
13 at least one requesting mobile unit;

14 wherein said at least one mobile unit and said base station a priori know the
15 location of said prescribed portion of said control channel resource in said control
16 channel, wherein control header information that indicates at least a structure of said
17 control message is not required to be transmitted with said uplink traffic channel
18 requests; and

19 utilizing said received traffic channel request to determine the true value of said
20 received traffic channel request by subtracting an amount of traffic channel resource that
21 has been assigned to said mobile unit that is not known to the mobile unit as being
22 assigned at the time said mobile unit transmitted an uplink traffic channel request from an
23 amount of said traffic channel resource requested in said transmitted uplink traffic
24 channel request.

1 Claim 40 (allowed): The method as defined in claim 39 wherein said wireless
2 communications base station is for use in an orthogonal frequency division multiplex
3 multiple access wireless communication system.

1 Claim 41 (allowed): The method as defined in claim 39 wherein said request
2 response message includes a traffic channel assignment for said at least one mobile unit.

Claims 42 and 43 (previously canceled).

Application Serial No. 09/641,636

1 Claim 44 (allowed): The method as defined in claim 39 including a step of
2 utilizing said true value of said traffic channel request to generate a traffic channel
3 assignment for said at least one mobile unit that transmitted the traffic channel request.

1 Claim 45 (allowed): A method for use in a wireless mobile communication
2 system including a plurality of mobile units and at least one base station comprising the
3 steps of:

4 in each of said mobile units

5 generating a control channel including a prescribed control channel resource, said
6 control channel being dedicated exclusively to a particular mobile unit and having a
7 prescribed portion of said control channel resource reserved to transport uplink traffic
8 channel requests, wherein each mobile unit has a distinct control channel and contention
9 is eliminated on said uplink,

10 transmitting said uplink traffic channel requests in said prescribed portion of said
11 control channel resource to a base station,

12 receiving a response including an uplink channel assignment from said base
13 station, and

14 controlling said transmitting to periodically repeating transmission of said uplink
15 traffic channel request in prescribed one or more of said one or more time slots prior to
16 said particular mobile unit receiving a response from said base station,

17 wherein said particular mobile unit and said base station a priori know the
18 location of said prescribed portion of said control channel resource in said control
19 channel,

20 wherein there is no need to include control header information that indicates at
21 least a structure of said control message with said uplink traffic channel requests; and

22 in said at least one base station

23 monitoring at least one prescribed portion of a control channel resource of an
24 incoming control channel to detect an incoming uplink traffic channel request from at
25 least one mobile unit to which said at least one prescribed portion of said control channel
26 resource is exclusively dedicated, said traffic channel request being periodically
27 repeatedly transmitted by said at least one mobile unit,

Application Serial No. 09/641,636

28 determining whether any uplink traffic channel requests have been received and,
29 if an uplink traffic channel request has been detected, assigning a traffic channel to said at
30 least one requesting mobile unit,

31 in responsive to a determination that at least one request has been received,
32 transmitting a request response message including said traffic channel assignment to said
33 at least one requesting mobile unit,

34 wherein said at least one mobile unit and said base station a priori know the
35 location of said prescribed portion of said control channel resource in said control
36 channel, wherein control header information is not required to be transmitted with said
37 uplink traffic channel requests, and

38 utilizing said received traffic channel request to determine the true value of said
39 received traffic channel request by subtracting an amount of traffic channel resource that
40 has been assigned to said mobile unit that is not known to the mobile unit as being
41 assigned at the time said mobile unit transmitted an uplink traffic channel request from an
42 amount of said traffic channel resource requested in said transmitted uplink traffic
43 channel request.

1 Claim 46 (allowed): The system as defined in claim 45 wherein said wireless
2 mobile communication system is an orthogonal frequency division multiplex multiple
3 access wireless mobile communication system.

(The remainder of this page has been left blank)